MESSAGE FROM THE ADMINISTRATOR

Health & Safety Topic - Lessons Learned

"Those who cannot remember the past are condemned to repeat it."

--George Santayana, Philosopher

For more than 40 years, NASA proudly holds an unparalleled record of accomplishments in science, aeronautics, and space. Our ability to continue to achieve great things increasingly depends on our ability to remember, learn from, and build upon the important lessons of our past.

NASA's achievements, perhaps more so than other agency's, rest in open scrutiny by our customers—the American taxpayers. While visible, some of our accidents, failures, and close calls are not widely known. We conscientiously investigate, document, and track all our successes and failures. Yet, all of that work is meaningless if we fail to learn from and incorporate these experiences into our ongoing and future programs, projects, and operations.

In 1996, the mishap investigation board for the DC-XA Clipper Graham incident identified the need for rigorous technical program reviews and improved independent verification of the program/project management process. Two years later, the mishap investigation board report for the Lewis spacecraft mission also emphasized the need for an improved technical review process. And again a few months ago, the mishap investigation team for the Mars Climate Orbiter, in their Phase I report, identified the need for improved independent technical reviews on mission-critical components.

Although NPG 7120.5A requires all programs and projects to review and apply significant lessons learned, how many people in the NASA program/project management community have taken corrective action steps based on these findings? How many are aware of this recurring theme? How many have reviewed these mishap reports? How many know where to look for this information? How many know that this information is available to them?

We've put a tremendous amount of energy and talent into documenting these experiences in our mishap reports and our lessons learned database for the sole purpose of preventing this type of recurrence. The Office of Safety and Mission Assurance maintains a Web site (http://llis.nasa.gov) to facilitate the capture and sharing of this type of information. But that system is just a data morgue unless everyone makes the effort to review, understand, and act upon these findings and contribute their experiences. I suspect that some of our people may learn

more about these incidents and their investigations from the national news media than they do from internal NASA sources.

So, can we do a better job of learning from our past experiences to ensure higher rates of success? Definitely, yes. Here's an example of some folks at the Jet Propulsion Laboratory who are trying to do just that: the Outer Planet Solar Probe project team has developed a matrix screen for all the lessons learned in our Agencywide database. By cross checking against a refined list of project components, such as "instruments" and "propulsion," they found 51 lessons that could be applied to their project. This project is still several months away from its preliminary design review, so I'm encouraged to see it starting from the right place…**by checking up with our past to ensure success in our future**.

This is just one program's effort, and the lessons learned from our past are vitally important sources of information for risk management and mishap prevention activities only if everyone at NASA shares the knowledge. We all must improve NASA's chances for future success by finding the time to tap into and contribute to this source of shared knowledge.

I also challenge the NASA management team to create new forums in which NASA's senior scientists, engineers, and administrative staff can share their tremendous wealth of knowledge with their colleagues. We must do everything we can to capture and pass on the lessons learned from their experiences. Collectively, they represent NASA's greatest asset. I further challenge our senior scientists, engineers, and administrative staff to leave a lasting legacy with this Agency by mentoring younger colleagues and helping to foster the next generation of NASA superstars.

For additional information about NASA lessons learned and mishap reporting systems, please contact your Center's Safety and Mission Assurance (SMA) Office.

NASA Actions

- ***NASA Enterprise Associate Administrators and Institutional Program Officers:***

    - Oversee the use of information in the NASA Lessons Learned Information System (LLIS), the NASA Alert Reporting System (NARS), and the Government-Industry Data Exchange Program (GIDEP) as a key element of problem identification and sharing, risk management, and mishap prevention.
    - Create opportunities for seasoned Enterprise staff members to share their wealth of knowledge and lessons learned from past experiences.

- ***NASA Center Directors and the NASA HQ Associate Administrator for Center Operations:***

    - Contribute to, utilize, and disposition information in the NASA LLIS, NARS, and GIDEP as a key element of problem identification and sharing, risk management, and mishap prevention. Specific attention should be paid to lessons learned relative to program/project management processes.
    - Submit appropriate mishap and close call findings for inclusion in the NASA LLIS.
    - Create appropriate forums at each Center for the sharing of knowledge and lessons learned by seasoned Center personnel.

- ***NASA Program/Project Managers:***

    - Review and apply significant lessons learned from the NASA LLIS, NARS, and GIDEP prior to major milestones throughout the program/project life cycle as a key element of problem identification, risk management, and mishap prevention. Specific attention should be paid to lessons learned relative to program/project management processes.
    - Document and submit throughout the program/project life cycle any significant material, parts, or system problems and lessons learned as appropriate to the NASA LLIS, NARS, and GIDEP.
    - Review all contracts to ensure incorporation of GIDEP participation requirements to evaluate GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories.

- ***NASA Senior Scientists, Engineers, and Administrative Staff:***

    - Contribute your lessons learned to the NASA LLIS.
    - Look for opportunities to share your wealth of knowledge with your colleagues.
    - Select other colleagues with whom to mentor and share your expertise.